

In re Application of Heikkilä et al.
Serial No. 07/910,133
Filed July 14, 1992

Page 21, line 5, replace "Candida tropicalis" with --
Candida tropicalis--.

IN THE CLAIMS:

Please amend claims 1-14, and add new claims 15-16, as presented below.

Jul 82
1. (Amended) A process for the simultaneous production of xylitol and ethanol from a hydrolyzed lignocellulose-containing material, [characterized in that the starting] comprising fermenting said hydrolyzed lignocellulose-containing material [is fermented] with a yeast strain which is capable of converting free xylose to xylitol and ~~the free hexoses~~ present to ethanol [and yeast] to form a fermented product comprising xylitol, ethanol and yeast, recovering the resulting ethanol [produced is recovered] and [xylitol is] chromatographically [separated] separating a xylitol-rich fraction from the remaining [xylitol solution] fermented product, and recovering xylitol from said xylitol-rich fraction.

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2. (Amended) [A] The process according to Claim 1, comprising [characterized in that the starting] extracting the hydrolyzed lignocellulose-containing material to form an extracted solution [is extracted], fermenting the extracted solution [is fermented] to convert xylose into xylitol, [and a] chromatographically [separation] separating and [crystallization]

In re Application of Heikkilä et al.
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crystallizing [are carried out on] the xylitol solution to form
an extracted mass, [and a final hydrolysis is carried out on]
hydrolyzing the extracted mass, fermenting said extracted mass
[is fermented] and recovering the resulting ethanol [produced in
recovered].

3. (Amended) [A] The process according to Claim 1,
[characterized in that a] wherein said [xylane-containing]
lignocellulose-containing material is[, such as] birch or grain
hulls[, is used as a starting material].

4. (Amended) [A] The process according to Claim 1,
[characterized in that] wherein said lignocellulose-containing
material is sulphite [waste] spent liquor [is used as a starting
material].

5. (Amended) [A] The process according to Claim 1,
[characterized in that] further comprising crystallizing pure
xylitol [is crystallized] from the xylitol-rich fraction obtained
in the chromatography step.

6. (Amended) [A] The process according to Claim [1]
10, wherein [characterized in that] the yeast cells are removed
prior or subsequent to the distillation.

In re Application of Heikkilä et al.
Serial No. 07/910,133
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7. (Amended) [A] The process according to Claim 1, [characterized in that] wherein the yeast strain is of the genus [Candida] Candida or [Debaryomyces] Debaryomyces.

Sub I
8. (Amended) [A] The process according to Claim 1 or 7, [characterized in that] wherein the yeast is a [Candida tropicalis] Candida tropicalis species [and is preferably [Candida tropicalis] Candida tropicalis ATCC 9968].

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9. (Amended) [A] The process according to Claim 1, [characterized in that] wherein the yeast is of the species [a Debaryomyces hansenii] Debaryomyces hansenii [species].

10. (Amended) [A] The ~~process~~ according to Claim 1, [characterized in that] wherein the ~~ethanol~~ is recovered by distillation.

Sub E4
11. (Amended) [A] The process according to Claim [1] 2, [characterized in that] wherein the hydrolysis is carried out by steam explosion and enzymatic [final] hydrolysis.

Sub II
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12. (Amended) [A] The process according to Claim 1, [characterized in that] wherein the chromatographic separation is carried out ^{with a} by [using a] strong cation-exchanging resin as [the] a stationary phase.

In re Application of Heikkilä et al.
Serial No. 07/910,133
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A3 Sub I 13. (Amended) [A] The process according to Claim 1, [characterized in that] wherein the fermentation is carried out at a pH of about 4 - 7, [preferably about 5.7,] and at a temperature of about 10 - 45°C[, preferably about 25 - 35°C].

14. (Amended) [A] The process according to claim [2] 11, [characterized in that] wherein the [final] hydrolysis of the extracted mass is carried out enzymatically.

A4 Sub I --15. The process according to Claim 8, wherein the yeast is *Candida tropicalis* ATCC 9968.

16. The process according to Claim 13, wherein the fermentation is carried out at a pH of about 5.7 and at a temperature of about 25 - 35°C.--

REMARKS

Claims 1-16 are all of the claims pending in the application. Applicants have editorially amended the specification and claims 1-14 in view of the Examiner's comments in the pending Office Action.

The specification was amended in order to add a "Brief Description of the Figure, the description thereof being supported on page 15, lines 6-10, and by the Figure itself.